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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/783,448	<b>Applicant(s)</b> CZAJKOWSKI ET AL.	
	<b>Examiner</b> CAROLINE ARCOS	<b>Art Unit</b> 2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/12/2004</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Claims 1-13, and 15-46 are pending for examination. Claim 14 is missing in the original filed claims. According to MPEP rule 1.126, the claims had been renumbered as 1-45.

Applicant is required to correct the claim numbering and their dependency in response to this office action.

### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

3. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

4. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1- 5, 19, 24-27, 29-31 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5, 15-17, 22-26, 38-40, 44-49, 53-55, 59-62, 68-69, 73-75 and 79-81 of U.S. Application No. 10783738. Although the conflicting claims are not identical, they are not patentably distinct from each other. Claims 1-3 of the instant

Art Unit: 2195

application have similar limitation as claims 1-3 and 15 of the copending application since both inventions are monitoring and controlling resource requests for a resource separately from resource implementation based on common sets of attributes of the resource. Both invention determine if there is one or more trigger corresponding to any one of the requests and resolves the determined triggers.

6. The difference between both inventions is that the instant application teaches that the trigger determine if the threshold rate would be exceeded and delay servicing of the request, whereas the copending application teaches resolving the trigger by executing one or more of the corresponding policy decision to the determined triggers. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the trigger can be any condition including a threshold rate and delaying service of the request is the corresponding policy decision of the determined trigger which would improve system performance and throughput by regulating resource requests by delaying the request so it can be proceeded without denial of service in a later time.

***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

.

8. Claims 17, 28- 40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

9. As per claims 17, 28, 29 and 36 are not limited to statutory embodiments. In view of applicant's disclosure, specification page 40, par. [1140], lines 7-13, the media is not limited to statutory embodiments, instead being defined as including both statutory embodiments (e.g. Floppy diskette; CD-ROM; magneto-optical storage medium; ROM; RAM; EPROM and EEPROM; flash memory) and non-statutory embodiments (e.g. electrical, optical, acoustical, carrier waves, infrared signals, digital signals, etc.) As such, the claim is not limited to statutory subject matter and therefore non-statutory.

10. Claims 31-35 and 37-40 are rejected for similar reasons as discussed for their respective parent claims, as they fail to present any limitations that resolve the deficiencies of the claims from which they depend.

11. To overcome this type of 101 rejection, the claims need to be amended to include only physical computer media (computer storage medium) and not transmission media or other non-statutory or non-functional media.

### ***Claim Rejections - 35 USC § 112***

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 1-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. The following terms lacks antecedent basis:
  - i. The given interval – claim 10.
  - ii. The period of time – claim 22.
  - iii. The set of attributes – claim 45.
- b. The claim language in the following claims is not clearly understood:
  - i. As per claim 1, line 2, it is unclear how the determination if servicing a consume request for a resource would cause a threshold rate to be exceeded is accomplished (i.e. check available resource and calculate needed resource to make sure it doesn't exceed available resource?) Line 3, it is unclear what is meant by "a threshold rate"? (i.e. the max number of resources allowed in certain interval). Line 5, it is uncertain whether "the threshold" is the same as "a threshold rate" referred in line 3 (i.e. if it is the same it should be referred to as "the threshold rate"). Line 6, it is uncertain whether "the threshold" is the same as "a threshold rate" referred in line 3 (i.e. if it is the same it should be referred to as "the threshold rate").
  - ii. As per claim 2, Line 3, it is not clearly understood what is meant by computations? (i.e. application that consume resource). Line 3-4, it unclear what is meant by "state independent"? (i.e. execution state independency). Line 4, it is not clearly understood whether "other computations " reside within the same first isolate or different isolate?
  - iii. As per claim 3, Line 2, the use of the word "characterized" is inappropriate since 35 USC 112, second paragraph, requires the claim to

particularly point out and distinctly claim the invention, not merely its characteristics.

iv. As per claim 5, line 4, it is unclear what is meant by “resource consuming isolates”? ( i.e. each resource consuming isolate comprise one or more computation that consume the resource).

v. As per claim 6, line 2, it is uncertain what is meant by a “resource consumer”? (i.e. first isolate, second isolate, application, computations).

vi. As per claim 7, line 2, it is unclear what is meant by isolate?

vii. As per claim 8, line 1-2, it is not clearly understood how “recording previous consume requests” is done? ( i.e. store resource consume request ID in a table or how many time this particular consumer request a certain resource?) and what are the criteria for recording previous consume request? Furthermore, it is unclear whether "previous consume requests from the consumer" is meant for a particular resource or for all resources consumed by this particular consumer?

viii. As per claim 9, line 1-2, it is not clearly understood how “recording previously consumed amounts of the resource” is done? (i.e. store resource amount consumed) and what are the criteria for recording previously consumed amounts of the resource? It is unclear whether the calculation of previously consumed amount of the resource is for a particular consumer or is it the amount of resource consumed by all consumers?

ix. As per claim 11, Line 2, it is not clearly understood how determining the current usage of the requested resource is done? (i.e. check if the request resource

is in use?) It is unclear what is meant by "current usage"? (i.e. is it current amount used or whether or not the requested resource is currently in use). It is unclear whether the calculation of "current usage of the requested resource" is for a particular consumer or is it the amount of current usage of the requested resource by all consumers? Line 3, it is unclear whether "potential usage" is for a particular consumer or all consumer. It is unclear what is meant by the consume request? (i.e. is it the current usage?). It is uncertain what is a potential usage (i.e. is it a prediction of future usage?). Line 5, it is unclear whether previously consumed amount of the resource is calculated for all consumer or for a particular consumer? Line 7, it is unclear whether "determining" is the same as "determining" referred in claim 1 ( i.e. if it is the same determining, it should be referred to as said determining. it is unclear whether "threshold rate" is the same as "a threshold rate" referred in claim 1 (if it is the same threshold rate, it should be referred to as the threshold rate).

x. As per claim 12, it is unclear how the calculation of amount\_over\_threshold doesn't take into account the given interval in which the amount of resource was previously consumed.

xi. As per claim 39, it has the same deficiency as claim 12.

xii. As per claim 15, line 3, it is unclear what is meant by "the rate of requests"? ( i.e. number of request over a certain time). Line 5, it is unclear whether "a resource" is the same as "a resource" referred in claim 1? (i.e. if it is the same resource it should be referred to as said resource.



xiii. As per claim 18, line 2, it is unclear what are the criteria for “managing consume requests for a resource”? Line 3, it is unclear how “throttling the consume requests “is being done?”

xiv. As per claim 21, line 2, it is unclear whether the determination of usage is for the same resource referred to in claim 19 or a different resource? it is not clearly understood how determining the current usage is done? (i.e. check if the request resource is in use ?) It is unclear what is meant by "current usage"? (i.e. is it current amount used or whether or not the requested resource is being granted which lead to be called current usage). It is unclear whether the calculation of “current usage of the requested resource” is for a particular consumer or is it the amount of current usage of the requested resource by all consumers? Lines 2- 3, it is unclear whether “potential usage” is for a particular consumer or all consumer. It is unclear what is meant by the consume request?(i.e. is it the current usage?). It is uncertain what is a potential usage (i.e. is it a prediction of future usage?). Line 3, it is unclear whether previously consumed amount of the resource is calculated for all consumer or for a particular consumer?

xv. As per claim 34, it has the same deficiency as claim 21.

xvi. As per claim 23, lines 1-3, the claim language is indefinite, it is not clearly understood how “a threshold” would include four thresholds? It is unclear whether all four thresholds are calculated for a particular consumer?

xvii. As per claim 32, it has the same deficiency as claim 23.

xviii. As per claim 37, it has the same deficiency as claim 23.

xix. As per claim 42, it has the same deficiency as claim 23.

xx. As per claim 24, it is unclear what is meant by "state independent"? ( i.e. independent state of execution?)

xxi. As per claim 25, line 1, it is unclear what is meant by trigger? (i.e. threshold exceeding condition).

xxii. As per claim 38, line 2, It is unclear what is meant by "currently used amount of resource"? (i.e. is it current amount in use or whether or not the requested resource is being granted which lead to be called current usage). It is unclear whether "currently used amount of resource" is for a particular consumer or is it the amount of current usage of the requested resource by all consumers? Lines 3, it is unclear whether "potentially used amount" is for a particular consumer or all consumers. It is uncertain what is a potential usage (i.e. is it a prediction of future usage?). Line 3-4, It is unclear whether previously consumed amount of the resource is calculated for all consumer or for a particular consumer?

xxiii. As per claim 39, it has the same deficiency as claim 38.

xxiv. As per claim 35, line 1, it is unclear whether the claim is directed to a program product or a method. Examiner interprets the claim as a computer program product claim since it is dependent of a computer program product claim.

xxv. As per claim 44, Line 1, the use of the word "characterized" is inappropriate since 35 USC 112, second paragraph, requires the claim to

particularly point out and distinctly claim the invention, not merely its characteristics.

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1-2, 4-5, 14,17-20, 24-31, 33, 36, 38, 40- 41, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suri et al. (“Strong mobility and fine-grained resource control in NOMADS”, ACM, 2000, pages 1-12).

17. As per claim 1, Suri teaches the invention substantially as claimed including a method comprising:

if the threshold would be exceeded, then delaying servicing of the request for at least a period of time sufficient to avoid exceeding the threshold (page 7, lines 30-31; page 10, lines 10-11).

18. Suri doesn't explicitly teach that determining if servicing a consume request for a resource would cause a threshold rate that corresponds to the requested resource to be exceeded. However, it would have been obvious to one of ordinary skill in the art at the time the invention

Art Unit: 2195

was made to conclude based on Suri's teaching of checking consumer usage threshold rate is deciding whether servicing a new consume request would cause the usage to be above the threshold rate which would improve system performance and throughput by preventing system overwhelming with tasks that cannot be performed and preventing bottleneck.

19. As per claim 2, Suri teaches a first isolate resolves a trigger that determines if the threshold rate would be exceeded and delays servicing of the request, wherein the first isolate is a set of one or more computations that have a state independent of other computations and that monitors and control resource requests for the resource separate from the implementation of the resource (page 8, lines 6-11).

20. As per claim 4, Suri teaches that the trigger is specified by a second isolate (pg. 9, lines 9-14).

21. As per claim 5, Suri teaches that the second isolate installs the trigger in a resource domain and the first isolate determines the trigger from the resource domain, wherein the resource domain includes an encoding that associates one or more resource policies with resource consuming isolates (pg. 7, lines 23-26; pg. 8, lines 6-11; pg. 9, lines 9-14).

22. As per claim 14, Suri teaches that delaying servicing of the request comprises sleeping for the period of time resource (page 8, lines 10-11).

Art Unit: 2195

23. As per claim 17, Suri doesn't not explicitly disclose a computer program product encoded in one or more machine-readable media. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have some sort of storage device in the system in order to execute system tasks.

24. As per claim 18, Suri teach a method comprising:  
throttling the consume requests to conform to a threshold (pg. 7, lines 26-31; pg. 8, lines 6-11).

25. Suri doesn't explicitly teach managing consume requests for a resource (pg. 7, lines 23-24). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to conclude from Suri's teaching of enforcing rate limits on resource requests is managing consume requests for a resource which improve system performance and throughput by preventing system overwhelming with tasks that cannot be performed and preventing bottleneck.

26. As per claim 19, Suri teaches that throttling the consume requests comprises delaying those consume requests that would cause the threshold to be exceeded (pg. 8, lines 6-11).

Art Unit: 2195

27. As per claim 20, Suri teaches that delaying comprises sleeping for a period of time (pg. 8, lines 6-11).

28. As per claim 24, Suri teaches that a dispenser isolate manages resource requests, wherein isolates includes a set of one or more encapsulated computations with state independent of other computations (page 8, lines 6-11).

29. As per claim 25, Suri teaches the dispenser isolate resolves a trigger to throttle requests (pg. 7, lines 23-26; pg. 8, lines 6-11).

30. As per claim 26, Suri teaches that the trigger is specified by a second isolate (pg. 9, lines 9-14).

31. As per claim 27, Suri teaches that the second isolate installs the trigger in a resource domain, wherein the resource domain includes one or more encodings that associate resource policies for the resource and computations that consume the resource (pg. 7, lines 23-26; pg. 8, lines 6-11; pg. 9, lines 9-14).

32. As per claim 29, Suri teaches a computer program product encoded on one or more machine-readable media, the computer program product comprising:

a rate control code that delays resource consume requests that will cause a

threshold to be exceeded (pg. 7, lines 22-31).

33. Suri doesn't explicitly teach a posting facility code that posts consume requests for resources (pg. 8, lines 24-29; Fig. 1). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to conclude from Suri's teaching of program console that interacts with the consumer within the execution system that this console is a posting facility that posts consume requests for resource which would improve system communication with the consumer by providing a front end interaction(API) that allow the consumer to interact with the execution system where servicing resource requests decision takes place.

34. As per claim 30, Suri teaches that the posting facility code is based at least in part on a dispenser class, wherein the dispenser class defines an intermediary set of one or more computations that monitor and control resource requests (pg. 8, lines 24-29; Fig. 1).

35. As per claim 31, Suri teaches that the rate control code is based at least in part on a trigger class, wherein the trigger class defines one or more computations that query existence of at least one condition based at least in part on usage of a given resource (pg. 7, lines 23-31; pg. 8, lines 6-11; pg. 9, lines 9-14).

36. As per claim 33, Suri teaches the rate control code invokes a sleep computation to delay resource consume requests (page 8, lines 6-11).

37. As per claim 36, Suri teaches a computer program product encoded on one or more machine-readable media, the computer program product comprising:

a first sequence of instructions to determine if servicing a consume resource request will cause a threshold to be exceeded (pg. 8, lines 9-10); and

a second sequence of instructions to determine a period of time to delay the request to avoid exceeding the threshold (pg. 8, lines 10-11).

38. As per claim 38, Suri doesn't explicitly teach the period of time to delay the request is based at least in part on a currently used amount of the resource, a potentially used amount of the resource based on the resource request, a previously consumed amount of the resource, a time interval, and the threshold, wherein the previously consumed amount of the resource indicate the amount of previously consumed resource within the interval.

39. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate the period of time to delay the request based the amount of request that is over the threshold within a given time which would improve system performance and throughput by regulating the time to delay request, request can be proceeded without denial of service in a later time.



Art Unit: 2195

40. As per claim 40, Suri teaches that delaying the request comprises sleeping (pg. 8, lines 10-11).

41. As per claim 41, Suri teaches an apparatus comprising:  
system memory (page 5, lines 38-39); and  
means for throttling resource requests to comply with a threshold, which corresponds to a resource (page 8, lines 6-11).

42. As per claim 43, Suri teaches means for determining if the threshold will be exceeded (page 8, lines 6-11).

43. As per claim 45, Suri doesn't teach that the set of attributes include disposable, revocable, reservable, and bounded. However, It would have been obvious to one of ordinary skill in the art at the time the invention was made would be motivated to include the well known attributes of disposable, revocable, reservable, and bounded because this is can apply to a broad range of attribute types that cover the well known range of types to facilitate the selection and monitoring of resources request.

44. Claims 6- 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suri et al. ("Strong mobility and fine-grained resource control in NOMADS", ACM, 2000, pages 1-12), in view of Czajkowski et al. ("JRes: A reosurce accounting interface for Java", ACM, 1998, pages 21-35).

Art Unit: 2195

45. As per claim 6, Suri doesn't teach explicitly that the threshold rate indicates a maximum allowable resource usage by a particular resource consumer within a given interval. However Czajkowski teaches the threshold rate indicates a maximum allowable resource usage by a particular resource consumer within a given interval (page 26, lines 38-42).

46. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Czajkowski teaching because Czajkowski's teaching of he threshold rate indicates a maximum allowable resource usage by a particular resource consumer within a given interval would improve system performance and allowing each consumer to have an equal sharing opportunity of a certain resource.

47. As per claim 7, Czajkowski teach that resource consumer includes client, isolate, process, and application (page 22, lines 31-35; page 26, right col., lines 9-18; page 31, right col., lines 12-16).

48. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suri et al. ("Strong mobility and fine-grained resource control in NOMADS", ACM, 2000, pages 1-12), in view of Czajkowski et al. ("JRes: A resource accounting interface for Java", ACM, 1998, pages 21-35), and further in view of Chambliss et al. ((US 7,228,354 B2).

49. As per claim 8, the combined teaching of Suri and Czajkowski doesn't explicitly teach recording previous consume requests from the consumer. However, Chambliss teaches recording

previous consume requests from the consumer (col.12, lines 5-23; Fig. 8, element 806).

50. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri, Czajkowski and Chambliss because Chambliss teaching of recording previous consume request from the consumer would improve system monitoring and resource regulating and control by identifying consumer with high number of requests that exceed the threshold and be able to regulate resource consumption.

51. Claims 9-12, 21, 23, 32, 34, 37 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suri et al. ("Strong mobility and fine-grained resource control in NOMADS", ACM, 2000, pages 1-12), in view of Chambliss et al. (US 7,228,354 B2).

52. As per claim 9, Suri doesn't explicitly teach recording previously consumed amounts of the resource. However, Chambliss teaches recording previously consumed amounts of the resource (col.4, lines 41-46; col.12, lines 11-17).

53. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Chambliss because Chambliss teaching of recording previous consume request from the consumer would improve system Suri's monitoring and resource regulating and control by identifying consumer with high number of requests that exceed the threshold and be able to regulate resource consumption.

54. As per claim 10, the combined teaching of Suri and Chambliss doesn't teach purging those recorded previously consumed amounts of the resource that fall beyond the given interval. However, Chambliss teaching of updating the record with the new data finding is purging previously consumed amount of resource which would improve system performance by deleted unnecessary information and freeing up the space for more important operations of the system.

55. As per claim 11, Chambliss teaches wherein determining comprises:  
determining a current usage of the requested resource (col.12, lines 13-17);  
determining a potential usage of the resource based at least in part on the consume request (col.10, lines 38-46);  
determining previously consumed amounts of the resource within a given interval from the recorded previous consumed amounts (col.12, lines 26-48); and  
determining if threshold rate will be exceeded based at least in part on the current usage, the potential usage, and the previously consumed amounts of the resource (Fig. 4; Fig.10).

56. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Chambliss because Chambliss teaching of recording a current usage, a potential usage, and a previously consumed resource amount within an interval would improve system Suri's monitoring and resource regulating and control by identifying consumer with high number of requests that exceed the threshold and be able to regulate resource consumption.

57. As per claim 12, Suri doesn't explicitly teach that determining if the threshold rate is exceeded is in accordance with the following, wherein previously consumed amounts indicates the amount of resource previously consumed within the given interval:

$\text{amount\_overthreshold} = \text{potentialusage} - \text{currentusage} + \text{previouslyconsumedamount} - \text{threshold}.$

58. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate amount over the threshold by taking into consideration previous usage, current usage, potential usage and how this comply with the threshold would improve resource monitoring and controlling by regulating the resource usage based on the amount over the threshold.

59. As per claim 21, Suri doesn't explicitly teach determining a current usage, a potential usage, and a previously consumed resource amount within an interval. However, Chambliss teaches determining a current usage, a potential usage, and a previously consumed resource amount within an interval (col.10, lines 38-46; col.12, lines 13-17; Fig. 4; Fig.10).

60. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Chambliss because Chambliss teaching of recording a current usage, a potential usage, and a previously consumed resource amount within an interval would improve system Suri's monitoring and resource regulating and control by identifying consumer with high number of requests that exceed the threshold and be able to regulate resource

consumption.

61. As per claim 23, Suri teaches that threshold includes threshold includes threshold consumed resource amount, and threshold consume request rate (pg. 7, lines 26-31; Pg. 7, lines 32-35).

62. Suri doesn't not explicitly teach that the threshold includes threshold resource consumption rate, and threshold number of resource consume requests. However, Chambliss teaches that the threshold includes threshold resource consumption rate and threshold number of resource consume requests (col.7, lines 25-36; col.7, lines 50-54).

63. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Chambliss because Chambliss teaching would improve the system efficiency in controlling resource requests by taking into consideration critical thresholds that will help the system in taking more accurate decision of accepting the request or putting the request in a delay period.

64. As per claim 32, Suri teaches that threshold includes threshold consumed resource amount and threshold consume request rate (pg. 7, lines 26-31; Pg. 7, lines 32-35).

65. Suri doesn't not explicitly teach that the threshold includes threshold resource consumption rate, threshold number of resource consume requests. However, Chambliss teaches

that the threshold includes threshold resource consumption rate and threshold number of resource consume requests (col.7, lines 25-36; col.7, lines 50-54).

66. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Chambliss because Chambliss teaching would improve the system efficiency in controlling resource requests by taking into consideration critical thresholds that will help the system in taking more accurate decision of accepting the request or putting the request in a delay period.

67. As per claim 34, Suri doesn't explicitly teach the rate control code that further determines a current resource usage, a potential resource usage, and a previously consumed resource amount within an interval. However, Chambliss teaches that the rate control code that further determines a current resource usage, a potential resource usage, and a previously consumed resource amount within an interval(col.10, lines 38-46; col.12, lines 13-17; Fig. 4; Fig.10).

68. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Chambliss because Chambliss teaching of recording a current resource usage, a potential resource usage, and a previously consumed resource amount within an interval would improve system Suri's monitoring and resource regulating and control by identifying consumer with high number of requests that exceed the threshold and be able to regulate resource consumption.

69. As per claim 37, Suri teaches that threshold includes threshold consumed resource amount and threshold consume request rate (pg. 7, lines 26-31; Pg. 7, lines 32-35).

70. Suri doesn't not explicitly teach that the threshold includes threshold resource consumption rate, threshold number of resource consume requests. However, Chambliss teaches that the threshold includes threshold resource consumption rate and threshold number of resource consume requests (col.7, lines 25-36; col.7, lines 50-54).

71. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Chambliss because Chambliss teaching would improve the system efficiency in controlling resource requests by taking into consideration critical thresholds that will help the system in taking more accurate decision of accepting the request or putting the request in a delay period.

72. As per claim 42, Suri teaches that threshold includes threshold consumed resource amount and threshold consume request rate (pg. 7, lines 26-31; Pg. 7, lines 32-35).

73. Suri doesn't not explicitly teach that the threshold includes threshold resource consumption rate, threshold number of resource consume requests. However, Chambliss teaches that the threshold includes threshold resource consumption rate and threshold number of resource consume requests (col.7, lines 25-36; col.7, lines 50-54).



74. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Chambliss because Chambliss teaching would improve the system efficiency in controlling resource requests by taking into consideration critical thresholds that will help the system in taking more accurate decision of accepting the request or putting the request in a delay period.

75. Claims 3 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suri et al. ("Strong mobility and fine-grained resource control in NOMADS", ACM, 2000, pages 1-12), in view of Courtrai et al ("Resource management for parallel adaptive components", IEEE, 2003, pages 1-7).

76. As per claim 3, Suri does not explicitly teach that the first isolate monitors and controls resource requests based at least in part on a set of common attributes characterizing the resource, wherein the set of attributes include disposable, revocable, reservable, and bounded. However, Courtrai, teaches that the first isolate monitors and controls resource requests based at least in part on a set of common attributes characterizing the resource (pg. 5, left col., lines 19-23; pg. 5, right col., lines 28-33; pg. 6, left col., lines 1-8; Fig. 3).

77. The combined teaching of Suri and Courtrai doesn't explicitly teach that the set of attributes include disposable, revocable, reservable, and bounded. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to use the combined teaching of Suri and Courtrai to include the well known attributes of disposable,

revocable, reservable, and bounded because this is can apply to a broad range of attribute types that cover the well known range of types to facilitate the selection and monitoring of resources request.

78. As per claim 44, Suri doesn't teach that the resource is characterized by a set of attributes that are common across different resources. However, Courtrai teaches that the resource is characterized by a set of attributes that are common across different resources (pg. 5, left col., lines 19-23; pg. 5, right col., lines 28-33; pg. 6, left col., lines 1-8; Fig. 3)

79. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Courtrai teaching because Courtrai teaching of characterizing resources with a set of attributes that are common across a wide range of resource would improve the system performance since controlling and searching for the resource will be much quicker and more efficient.

80. Claims 13, 22 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suri et al. ("Strong mobility and fine-grained resource control in NOMADS", ACM, 2000, pages 1-12), in view of Chambliss et al. (US 7,228,354 B2), and further in view of Belissent (WO 02/01834 A2).

81. As per claim 13, the combined teaching of Suri and Chambliss doesn't explicitly teach that the period of time is determined with the following: period of time =

$(\text{amount\_overthreshold}/\text{threshold}) * \text{interval}$ .

82. However, Belissent teaches that a period of time that the sleep computation is invoked is determined in accordance with the following:

$\text{period of time} = (\text{amount\_overthreshold}/\text{threshold}) * \text{interval}$  ((page 9, lines 7-11).

83. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Belissent because Belissent teaching of calculating period of time that the sleep computation is invoked would improve Suri's system performance since calculating the waiting time function, would give the system a better accurate measurement as for how long the request has to be delayed to conform with the threshold by taking into consideration the amount of request that is over the threshold.

84. As per claim 22, the combined teaching of Suri, Chambliss doesn't explicitly teach that the period of time is determined in accordance with the following:

$\text{amount\_overthreshold} = \text{potentialusage} - \text{currentusage} + \text{previouslyconsumedamount} - \text{threshold}$ ;  
and  $\text{period of time} = (\text{amount over\_threshold}/\text{threshold}) * \text{interval}$ .

85. However, Belissent teaches that the period of time is determined in accordance with the following:

$\text{period of time} = (\text{amount\_overthreshold}/\text{threshold}) * \text{interval}$  ((page 9, lines 7-11).

Art Unit: 2195

86. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Belissent because Belissent teaching of calculating period of time that the sleep computation is invoked would improve system performance and throughput by regulating the time to delay request, request can be proceeded without denial of service in a later time.

87. The combined teaching of Suri, Chambliss and Blissent doesn't explicitly teach that  $\text{amount\_overthreshold} = \text{potentialusage} - \text{currentusage} + \text{previouslyconsumedamount} - \text{threshold}$ .

88. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate amount over the threshold by taking into consideration previous usage, current usage, potential usage and how this comply with the threshold would improve resource monitoring and controlling by regulating the resource usage based on the amount over the threshold.

89. As per claim 35, the combined teaching of Suri, Chambliss doesn't explicitly teach that a period of time that the sleep computation is invoked is determined in accordance with the following:

$\text{amount\_overthreshold} = \text{potentialusage} - \text{currentusage} + \text{previouslyconsumedamount} - \text{threshold}$ ;  
and  $\text{period of time} = (\text{amount\_overthreshold} / \text{threshold}) * \text{interval}$ .

90. However, Belissent teaches that a period of time that the sleep computation is invoked is determined in accordance with the following:

period of time= (amount\_overthreshold/threshold)\*interval ((page 9, lines 7-11).

91. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Belissent because Belissent teaching of calculating period of time that the sleep computation is invoked would improve system performance and throughput by regulating the time to delay request, request can be proceeded without denial of service in a later time.

92. The combined teaching of Suri, Chambliss and Blissent doesn't explicitly teach that  $\text{amount\_overthreshold} = \text{potentialusage} - \text{currentusage} + \text{previouslyconsumedamount} - \text{threshold}$ .

93. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate amount over the threshold by taking into consideration previous usage, current usage, potential usage and how this comply with the threshold would improve resource monitoring and controlling by regulating the resource usage based on the amount over the threshold.

94. Claims 15-16 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suri et al. ("Strong mobility and fine-grained resource control in NOMADS", ACM, 2000, pages 1-12), in view of Belissent (WO 02/01834 A2).

95. As per claim 15, Suri teaches that determining if the threshold rate is exceeded comprises:

determining a rate of requests from a particular resource consumer (pg. 7, lines 25-31);

and

comparing the rate of requests against the threshold rate (pg. 7, lines 28-31).

96. Suri doesn't teach explicitly that the threshold rate indicates a maximum number of allowable requests for a resource within a given interval. However, Blissent teaches that the threshold rate indicates a maximum number of allowable requests for a resource within a given interval (pg. 9, lines 1-5).

97. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Belissent because Belissent's teaching of the threshold rate indicated a maximum number of allowable requests for a resource within a given interval would improve Suri's system performance by adding the factor of the time interval into account, the system will not be overused by any resource consumer and it would be easy to identify whether the resource consumer is a potential attacker by measuring its consumption over a period of time.

98. As per claim 16, Belissent teach determining the rate of requests comprises:

determining a number of requests received from the particular resource consumer over the given interval (pg. 9, lines 1-9).

Art Unit: 2195

99. As per claim 39, the combined teaching of Suri doesn't explicitly teach that a period of time that the sleep computation is invoked is determined in accordance with the following:

$\text{amount\_overthreshold} = \text{potentialusage} - \text{currentusage} + \text{previouslyconsumedamount} - \text{threshold};$   
and  $\text{period of time} = (\text{amount\_overthreshold} / \text{threshold}) * \text{interval}.$

100. However, Belissent teaches that a period of time that the sleep computation is invoked is determined in accordance with the following:

$\text{period of time} = (\text{amount\_overthreshold} / \text{threshold}) * \text{interval}$  ((page 9, lines 7-11).

101. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Suri and Belissent because Belissent teaching of calculating period of time that the sleep computation is invoked would improve Suri's system performance performance and throughput by regulating the time to delay request, request can be proceeded without denial of service in a later time.

102. The combined teaching of Suri and Blissent doesn't explicitly teach that  
 $\text{amount\_overthreshold} = \text{potentialusage} - \text{currentusage} + \text{previouslyconsumedamount} - \text{threshold}.$

103. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate amount over the threshold by taking into consideration previous usage, current usage, potential usage and how this comply with the threshold would improve resource monitoring and controlling by regulating the resource usage based on the amount over

the threshold.

***Conclusion***

104. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(US 7028298 B1) teaches managing resource usage depending on usage threshold of different resource.

(US 20030018786 A1) teaches Resource policy management.

(US 20040117311 A1) teaches Apparatus, methods and computer programs for metering and accounting for services accessed over a network.

(US 20010039581 A1) teaches System for balance distribution of requests across multiple servers using dynamic metrics.

105. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAROLINE ARCOS whose telephone number is (571)270-3151.

The examiner can normally be reached on Monday-Thursday 7:00 AM to 5:30 PM.

106. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2195

107. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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